

IN THE CLAIMS:

Please amend the claims as shown below:

Claims 1-3 (cancelled).

Claim 4 (previously presented): A method of making a GaN single crystal substrate according to claim 16, wherein said opening windows of said mask layer are stripe windows shaped like stripes.

Claim 5 (original): A method of making a GaN single crystal substrate according to claim 4, wherein said stripe windows extend in a $\langle 10\text{-}10 \rangle$ direction of said lower epitaxial layer made of GaN and have a window width within a range of $0.3\text{ }\mu\text{m}$ to $10\text{ }\mu\text{m}$ and a mask width within a range of $2\text{ }\mu\text{m}$ to $20\text{ }\mu\text{m}$.

Claim 6 (original): A method of making a GaN single crystal substrate according to claim 4, wherein said stripe windows extend in a $\langle 1\text{-}210 \rangle$ direction of said lower epitaxial layer made of GaN and have a window width within a range of $0.3\text{ }\mu\text{m}$ to $10\text{ }\mu\text{m}$ and a mask width within a range of $2\text{ }\mu\text{m}$ to $20\text{ }\mu\text{m}$.

Claim 7 (previously presented): A method of making a GaN single crystal substrate according to claim 16, further comprising after said epitaxial layer growing step:

a GaAs substrate eliminating step of eliminating said GaAs substrate; and

a grinding step of grinding a lower surface of said buffer layer and an upper surface of said epitaxial layer.

Claims 8-12 (canceled)

Claim 13 (previously presented): A method of making a GaN single crystal substrate according to claim 16, wherein said buffer layer is formed by hydride VPE.

Claims 14 and 15 (canceled)

Claim 16 (currently amended): A method of making a GaN single crystal substrate comprising:

- a buffer layer forming step of forming a buffer layer on said GaAs substrate;
- a lower epitaxial layer growing step of growing on said buffer layer a lower epitaxial layer made of GaN;
- a mask layer forming step of forming on said lower epitaxial layer, a mask layer having a plurality of opening windows disposed separate from each other; and
- an epitaxial layer growing step of growing on said mask layer an upper epitaxial layer made of GaN,

wherein said mask forming step includes arranging said plurality of said opening windows with a pitch L in a $\langle 10\text{-}10 \rangle$ direction of said lower epitaxial layer so as to form a $\langle 10\text{-}10 \rangle$ window group, and arranging a plurality of $\langle 10\text{-}10 \rangle$ window groups in parallel with a pitch d ($0.75L \leq d \leq 1.3L$) in a $\langle 1\text{-}210 \rangle$ direction of said lower epitaxial layer[.], and

wherein said upper expitaxial layer growing step includes initially growing a hexagonal pyramid shaped crystal in each of said opening windows whereafter each crystal connects with other crystals on said mask layer without interstices therebetween.

Claim 17 (original): A method of making a GaN single crystal substrate according to claim 16, wherein said $\langle 10\text{-}10 \rangle$ window groups are arranged in parallel such that the center position of each opening window in each $\langle 10\text{-}10 \rangle$ window group shifts by about $1/2L$ in said $\langle 10\text{-}10 \rangle$ direction from the center position of each opening window in said $\langle 10\text{-}10 \rangle$ window group adjacent thereto.

Claims 18 and 19 (canceled)

Claim 20 (original): A method of making a GaN single crystal substrate according to claim 16, wherein said pitch L of opening windows is within a range of $3\text{ }\mu\text{m}$ to $10\text{ }\mu\text{m}$.

Claims 21-24 (canceled)

Claim 25 (currently amended): A method of making a GaN single crystal substrate according to claim ~~2~~ 16, wherein said opening windows of said mask layer are rectangular windows in an oblong form having a longitudinal direction aligning with a $\langle 10\text{-}10 \rangle$ direction of said lower epitaxial layer, a plurality of said rectangular windows being arranged with a pitch L in said $\langle 10\text{-}10 \rangle$ direction so as to form a $\langle 10\text{-}10 \rangle$ rectangular window group, a plurality of $\langle 10\text{-}10 \rangle$ rectangular window groups being arranged in parallel with a pitch d in a $\langle 1\text{-}210 \rangle$ direction of said lower epitaxial layer.

Claims 26 (original): A method of making a GaN single crystal substrate according to claim 25, wherein said $\langle 10\text{-}10 \rangle$ rectangular window groups are arranged in parallel such that the center position of each opening rectangular window in each $\langle 10\text{-}10 \rangle$ rectangular window group shifts

by about $1/2L$ in said $\langle 10\text{-}10 \rangle$ direction from the center position of each rectangular window in said $\langle 10\text{-}10 \rangle$ rectangular window group adjacent thereto.

Claims 27 and 28 (canceled)

Claim 29 (original): A method of making a GaN single crystal substrate according to claim 25, wherein said rectangular windows have a pitch L of $4\text{ }\mu\text{m}$ to $20\text{ }\mu\text{m}$, said rectangular windows adjacent to each other in the longitudinal direction of said rectangular windows have a mask length of $1\text{ }\mu\text{m}$ to $4\text{ }\mu\text{m}$ therebetween, each of said rectangular windows has a width w of $1\text{ }\mu\text{m}$ to $5\text{ }\mu\text{m}$, and said rectangular windows adjacent to each other in the transverse direction of said rectangular windows have a mask width ($d - w$) of $2\text{ }\mu\text{m}$ to $10\text{ }\mu\text{m}$ therebetween.

Claim 30 (previously presented): A method of making a GaN single crystal substrate according to claim 16, wherein each of said opening windows of said mask layer is a hexagonal window formed like a hexagonal ring, each of the six sides of said hexagonal window aligning with a $\langle 10\text{-}10 \rangle$ direction of said lower epitaxial layer.

Claims 31-33 (canceled)

Claim 34 (previously presented): A method of making a GaN single crystal substrate according to claim 16, wherein said epitaxial layer is grown in said epitaxial layer growing step so as to form an ingot of GaN single crystal,

said method further comprising a cleaving step of cleaving said ingot into a plurality of sheets.

Claim 35 (previously presented): A method of making a GaN single crystal substrate according to claim 16, wherein said epitaxial layer is grown in said epitaxial layer growing step so as to form an ingot of GaN single crystal,

said method further comprising a cleaving step of cleaving said ingot into a plurality of sheets.

Claim 36 (previously presented): A method of making a GaN single crystal substrate comprising: an ingot forming step of growing on the GaN single crystal substrate obtained by the method according to claim 16 an epitaxial layer made of GaN so as to form an ingot of GaN single crystal; and

a cutting step of cutting said ingot into a plurality of sheets.

Claim 37 (previously presented): A method of making a GaN single crystal substrate comprising: an ingot forming step of growing on the GaN single crystal substrate obtained by the method according to claim 16 an epitaxial layer made of GaN so as to form an ingot of GaN single crystal; and

a cleaving step of cleaving said ingot into a plurality of sheets.

Claims 38-58 (canceled)

Claim 59 (previously presented): A method of making a GaN single crystal substrate according to claim 16, wherein said upper epitaxial layer is vapor phase grown on said mask layer.